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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,558

12/11/2003

Garrie D. Huisenga

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12/14/2005

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EXAMINER

BLOUNT, ERIC

ART UNIT

PAPER NUMBER

2636

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. X	Applicant(s)	
	10/733,558	HUISENGA ET AL.	
	Examiner	Art Unit	
	Eric M. Blount	2636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 11-17, 21, 23, 28-31, 33, 34, 36-41 and 46-49 is/are rejected.
- 7) ☒ Claim(s) 6, 10, 18-20, 22, 24-27, 32, 35, 42-45 and 50 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>see attachment</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the limitations "the process control loop" and "the loop" in lines 4 and 5 respectively. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4, 8, 12, 13, 15, 21, 23, 28, 29, 31, 33, 39, 41, 46-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Longsdorf [U.S. Patent No. 4,804,958].
5. As for **claim 1**, Longsdorf discloses a process device for use in a process control system comprising:
 - a. Output circuitry (24) configured to couple to a process control loop (26) and control electrical current (I_T) through the loop (26) to transmit process-related information (sensor readings); and

b. Loop override circuitry (66) configured to override operation of the output circuitry (90) and set the electrical current (I_T) in the loop (26) to a desired current level (column 2, lines 50-65 and column 7, lines 36-42).

As for **claim 2**, Longsdorf discloses diagnostic circuitry (14) configured to detect an alarm condition and responsively actuate the loop override circuitry (column 2, lines 55-65).

As for **claim 4**, the diagnostic circuitry includes a sense resistor (50) connected in series with the loop.

As for **claims 8, 9, and 48**, the process device is a process variable transmitter (10).

Regarding **claims 12, 37, and 38**, the loop override circuitry along with the output means includes a microcontroller (98).

As for **claims 13 and 39**, the process device is completely powered with power received through the process control loop (column 2, lines 15-23).

Regarding **claims 15, 41, and 46**, a comparator (30) is configured to actuate the loop override circuitry if the loop current is outside of a predetermined threshold level (column 2, lines 50-64).

As for **claim 21**, a microcontroller (98) is configured to activate the loop override circuitry (66) (column 4, lines 15-35).

As for **claim 23**, the microcontroller actuates the loop override circuitry based upon a comparison of the loop current with an expected value of the loop current (column 2, lines 47-64).

As for **claim 28**, a sensor (16) is configured to sense a process variable (column 1, line 62- column 3, line 2).

As for **claim 29**, the process device is a process variable transmitter (10).

As for **claim 31**, the output circuitry is configured to couple to a process control loop of the two-wire type (26, column 2, line 11).

Regarding **claims 33 and 47**, Longsdorf discloses a method implemented in a process device of sending a desired current signal on a process control loop, comprising:

- a. detecting an alarm condition (column 2, lines 47-56), the undesired change is an alarm condition.
- b. a process device (58) coupled to the process control loop
- c. overriding operation of output circuitry in the device in response to a detected alarm condition, the output circuitry configured to control current in the process control loop; and
- d. controlling the loop current to a desired level during the step of overriding operation of the output circuitry (column 2, lines 47-64 and column 7, lines 36-52).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2,5, 11, 14, 16, 17, 30, 34, 36, 40, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Longsdorf.

As for **claims 3 and 34**, Longsdorf is silent on whether the diagnostic circuitry measures a quiescent current level. However, one of ordinary skill in the art would have recognized that any type of current level could have been measured through the loop as long as thresholds were set for that type of measurement.

Regarding **claim 5**, A-to-D converters were well known and widely used at the time of the invention by the applicant. It would have been obvious to one of ordinary skill in the art to add the converter at any place where digital results were desired from and analog output.

As for **claims 11 and 36**, Longsdorf discloses that a desired current level may be between 3.9 mA and 20.8 mA (column 7, lines 36-52). It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant the threshold levels for an undesired change could be adjusted to narrower or broader limits depending on the device and environment being monitored.

Regarding **claims 14, 30, 40, and 49**, according to www.wikipedia.org, it was well known in the art for systems to communicate in accordance with the Hart ®

protocol. It would have been obvious for the system 4-20 mA device of Longsdorf to communicate with one of the most popular 4-20 mA communications protocols known.

Regarding **claims 16 and 17**, one of ordinary skill in the art would have recognized the loop override circuitry could be tweaked to work with the output circuitry whether it was connected in parallel or series. One skilled in the art would know that either instance would be an engineering design choice.

Allowable Subject Matter

8. Claims 6, 10, 18-20, 22, 24-27, 32, 35, 42-45, and 50 are objected to as being dependent upon a rejected base claim, but it appears that they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M. Blount whose telephone number is (571) 272-2973. The examiner can normally be reached on 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on (571) 272-2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric M. Blount
Examiner
Art Unit 2636



JEFFERY HOFSAAS
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